**OBAFEMI AWOLOWO UNIVERSITY, ILE-IFE.**

**DEPARTMENT OF MATHEMATICS.**

**MTH 105 TEACHING SCHEDULE**

**FOR HARMATTAN SEMESTER, 2019/2020 SESSION.**

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| **Duration** | **Topics** | **Lecturer** |
| 4 working days | **Set theory I:** Sets, Types – empty, universal, subset, complement, finite, infinite, power, equal, difference of two sets, etc; Set operation – union, intersection, disjoint, symmetric difference; Negation of set operation; etc. | Prof. A. K.Olapade |
| 6 working days | **Set theory II:** Algebra of sets – closure, commutativity, inverse, identity, etc; De-Morgan’s; Venn diagram; Cardinal number.**Operations with real number:** The Natural, Real, Rational, Irrational numbers, etc; Fundamental operations of algebra – addition and multiplication; Remainder and Factor theorems. | Dr. O. K. Agunloye |
| 6 working days | **Operations with real number:** Surds; Indices; Logarithms; Indical equations; Inequalities. | Dr. I. O. Ayodeji |
| 5 working days | **Quadratic functions and equations:** The quadratic function; the relation between the roots of a quadratic equation and the coefficients. | Dr. K. A. Adeleke |
| 7 working days | **The Binomial theorem:** Elementary examples in the use of combination and permutation and their applications; mathematical induction; the Binomial theorem for a positive integral index; the use of the expansion , where  is fractional or negative, simple approximations. | Dr. O. O. Fabelurin |
| 8 working days | **Matrices:** Definition of  matrices , types – row, square, unit, transpose, symmetric, triangular, etc; addition of matrices, matrix multiplication and its properties; trace. Minor of a matrix; determinant and its properties; rank of a matrix; adjoint of a matrix; matrix inversion; Solution of linear equations in three unknowns. | Dr. A. A. Aderogba  |
| 8 working days | **Trigonometry:** Circular measure; Compound angles; Definition and properties of sine, cosine, tangent, etc – trigonometry ratios for an acute angle, trigonometry ratios for any angle; Graphs of trigonometric functions; The addition formulae –, *Cos(A**B), Tan(A**B)*, etc; Multiple and submultiple angle formulae – *Sin(2A),*, *Tan(2A)*, etc; Factor formulae; Sine and cosine formulae; General solution of trigonometric equations such as ; Inverse trigonometric functions. | Mr. A. R. Babalola |
| 6 working days | **Calculus:** Limits & Differentiation from the first principles; Differentiation of algebraic, trigonometric, product, quotient, inverse, logarithmic, exponential, implicit functions. | Dr. B. A. Olokuntoye |



Dr. I. O. Ayodeji

(Course Coordinator)